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(54) PRODUCTION OF THIN FINE CRYSTAL SILICON FILM

(57) Abstract:

PURPOSE: To form a thin fine crystal Si film having a large crystal grain size and good quality without lattice distortion on a substrate by bringing hydrogen atoms having high purity and a gaseous Si material such as gaseous monosilane into reaction in a reaction vessel contg. The heated substrate.

CONSTITUTION: Gaseous H₂ is supplied into the vessel through a gaseous H₂ introducing port 1 and the electrically neutral hydrogen atoms having high chemical reactivity are generated to a high concn. by a hydrogen atoms in the stage of the generation thereof are removed by an impurity remover 3 and thereafter the hydrogen atoms are supplied into the reaction vessel 5.

On the other hand, the gaseous Si raw material such as gaseous monosilane, gaseous disilane or gaseous trisilane is supplied through a gaseous raw material introducing port 4 into the vessel 5 so as to react with the hydrogen atoms thereby forming the thin fine crystal Si film having the large crystal grain size and good quality on the surface of the substrate 6 heated to 50W350°C by a heater 7.

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